

A2  
7. (amended) The oil exchange timing indicating apparatus for a vehicle according to claim 1, wherein a preset value for the operation time is set based on a relationship between the operation time and the degree of degradation of oil.

A3  
14. (amended) The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein said controller includes a microcomputer for storing a plurality of preset values for the travel distances and the time of operation and for integrating the preset values for the travel distances and the time of operation to provide an output for advising a user of the exchange timing of oil.

A4  
16. (amended) The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein a preset value for the time of operation is set based on a relationship between the time of operation and the degree of degradation of oil.

**REMARKS**

Applicant is most appreciative of the thorough consideration the Examiner has accorded this patent application.

With the entry of this Amendment, claims 1-18 will remain pending in this application.

In the first Office Action, the Examiner objected to claims 5, 7, 14 and 16 because of language in these claims that was inconsistent with language in their parent claims. By the present Amendment, these inconsistencies have been corrected.

In the first Office Action, the Examiner rejected claims 1-18 under 35 USC §103(a) as being unpatentable over Mc Donald et al. (U.S. patent No. 6,327,900 B1) in view of Raffa et al. (U.S. patent No. 5,382,942). Applicant respectfully traverses this rejection.

In the oil life monitoring system and method disclosed by Mc Donald et al., assessments of the number of engine revolutions, engine oil temperature and engine oil contamination content are periodically performed. The results of the periodic assessments are evaluated using a micro-processor, which provides an alert to the operator of the vehicle if the results of the evaluation fall outside of predetermined acceptable criteria.

According to the Examiner, the Mc Donald et al. patent contains disclosure that satisfies the requirements in Applicant's independent claims 1 and 10 for "operation time integrator means" and "an operational timer." As support for this characterization, the Examiner cites column 4, lines 42-49, and column 5, lines 39-46 of the Mc Donald et al. patent. Applicant submits that a fair reading of the cited passages in Mc Donald et al., or, for that matter, the entire patent, cannot support the Examiner's contention. The cited passage in column 4 includes the statement: "During the entire period of operation, the

calculation of the remaining oil life is updated over a predetermined interval which may be measured in terms of time or in terms of elapsed engine revolutions." The cited passage in column 5 includes the statement: "During each engine operation, a counter accumulates the number of engine revolutions over a predetermined interval (in terms of time or engine revolutions) at a step 210." Obviously, the assessments performed during these "predetermined" intervals, whether measured in terms of time or of engine revolutions, do not yield data reflecting the time that the engine has been operation. (As disclosed in column 2, line 15, a "predetermined interval" may be one second.) These intervals are simply the time periods during which assessment of engine revolutions, engine oil temperature and engine oil contamination content are periodically performed.

The disclosure in Raffa et al. cannot remedy the deficiency of Mc Donald et al. vis-à-vis the claims in this application, as pointed out above. The Examiner relies upon Raffa et al. for a disclosure of using data from an odometer as a determinant of when oil in the vehicle should be changed. The Examiner contends that the disclosure in Raffa et al. provides a basis for incorporating an odometer in the Mc Donald et al. system, so that distance-traveled data generated by the odometer will be one of the factors used to determine the need for an oil change. Applicant respectfully disagrees. The system and method disclosed by Mc Donald et al. are an *alternative* to oil change schedules based on distance traveled. In fact, in column 1, lines 11-29,

of their patent, Mc Donald et al. disparage the use of distance traveled as criteria for determining the need for changing engine oil. In view of this disclosure in Mc Donald et al., it is hard to see how modifying the Mc Donald et al. system to incorporate an odometer, as proposed by the Examiner, can be viewed as obvious.

In view of the foregoing discussion, Applicant submits that the teachings in the Mc Donald et al. and Raffa et al. patents cannot properly serve as a basis for rejecting independent claims in this application and that these claims are therefore allowable over the cited prior art. The allowability of independent claims obviously inheres in dependent claims 2-9 and 11-18. These claims are, moreover, allowable by virtue of additional patentable limitations that they recite. The prior art of record does not, for example, fairly disclose a "controlling means" or a "controller" that performs rewriting of preset integrated values, as required in claims 2 and 11. From the discussion above, it is apparent that the cited prior art does not disclose a microcomputer for storing information relating to travel distances, as specified in claims 5, 6, 7, 14, 15 and 16. From the discussion above, it is apparent that the cited prior art cannot meet the required "integrated value of travel distance," required by claims 8 and 17 or "integrated value of operating time," required by claims 9 and 18.

Applicant has considered the other prior art references cited by the Examiner. These references were not applied against any of the claims in this application and do not warrant further discussion.

In view of the amendments and remarks presented herein, Applicant respectfully asks the Examiner to withdraw objections and the rejection stated in the last Office Action and recognize claims 1-18, all of the claims pending in this application, as allowable.

### **Conclusion**

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

Applicant hereby petitions, under the provisions of 37 CFR §§ 1.136(a) 1.17(a)(1), for a one (1) month extension of time for responding to the last Office Action. The extension fee in the amount of \$110.00 is paid by a check attached hereto.

The Examiner is invited to contact Frederick R. Handren, Reg. No. 32,874, at (703) 205-8066 in the Washington, DC area if a discussion with Applicant's representative would facilitate the resolution of any issues remaining in this application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge any payment or credit any overpayment to Deposit Account No. 02-2448. This authorization applies to any additional fees required

under 37 CFR §1.16 and 37 CFR §1.17 and in particular to fees for an extension of time.

Respectfully submitted,  
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## **MARKED-UP VERSION OF AMENDMENTS**

### **IN THE CLAIMS**

#### **The claims have been amended as follows:**

5. (amended) The oil exchange timing indicating apparatus for a vehicle according to claim 1, wherein said controlling means includes a microcomputer for storing a plurality of preset values for the travel distances and the ~~operating~~ operation time and for integrating the preset values for the travel distances and the ~~operating~~ operation time to provide an output for advising a user of the exchange timing of oil.

7. (amended) The oil exchange timing indicating apparatus for a vehicle according to claim 1, wherein a preset value for the ~~engine-operating time~~ operation time is set based on a relationship between the ~~engine-operating time~~ operation time and the degree of degradation of oil.

14. (amended) The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein said controller includes a microcomputer for storing a plurality of preset values for the travel distances and the ~~operational~~ time of operation and for integrating the preset values for the travel distances and the ~~operational~~ time of operation to provide an output for advising a user of the exchange timing of oil.

16. (amended) The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein a preset value for the ~~engine-operating-time~~ of operation is set based on a relationship between the ~~engine-operating time~~ of operation and the degree of degradation of oil.